

JAPANESE [JP,06-087095,U]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS OPERATION EXAMPLE DESCRIPTION OF
DRAWINGS DRAWINGS

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CLAIMS

[Utility model registration claim]

[Claim 1] The display characterized by preparing the control unit which can be rotated between the position in which it laps with the front face at said display material in the display with which the display material which can rotate in the direction which changes the sense of the screen in the condition of having moved to the method of outside from the interior of a case, and having moved to the method of outside was prepared, and the position in which it stands up to a front face.

[Claim 2] In the display with which the display material which can rotate in the direction which changes the sense of the screen in the condition of having moved to the method of outside from the interior of a case, and having moved to the method of outside was prepared The display characterized by preparing the rotatable control unit in the standing-up position to the front face of display material when the outlet of a case is closed when said display material is contained by the case, and display material projected and rotates to a way outside a case.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the display with which the control unit which starts the display which display material, such as a television monitor, moves and starts to a way outside a case, or rotates into a falling position etc., especially is easy to operate it from the screen front of display material was prepared.

[0002]

[Description of the Prior Art]

Drawing 12 is the perspective view showing the display for the conventional mount.

a case 1 lays this display underground in the console panel of an automobile -- having -- a nose -- the apical surface of the section 2 is installed in the condition of appearing in a console panel side.

In the case 1, the supporter material 3 which moves to an A1-A 2-way is formed, and the display material 4, such as a television monitor, is supported by the migration bracket further prepared in the interior of this supporter material 3.

[0003]

at the time of un-using it, the display material 4 contains in a case 1 in a horizontal position -- having -- the head of upper bed side 4a of the display material 4, and the supporter material 3 -- a nose -- it is located in the same field as the front face of the section 2. A push on the operating button 5 prepared in upper bed side 4a projects four in the display material of horizontal position 1 direction with the supporter material 3 with the power formed in the interior of a case 1. The supporter material 3 stops in the location of drawing 12, said migration bracket moves forward further, and the display material 4 moves forward with this. And after only a predetermined dimension projects, the display material 4 starts into the position shown with the chain line in drawing 12, and is rotated, and the display screen 4b is turned to vehicle inboard.

When after an activity pushes said operating button 5, the display material 4 rotates to the horizontal position first shown as a continuous line, then, moves to A 2-way, and is contained in a case 1.

[0004]

[Problem(s) to be Solved by the Device]

In the display for the above-mentioned mount, since an installation tooth space in the car had constraint, the dimension of a case 1 could seldom be enlarged, but the magnitude of the display material 4 therefore contained in a case 1 was also restricted. And since display screen 4b of the display material 4 must secure somewhat widely, the area of allowances field 4 of fields other than display screen 4b, for example, down [of display screen 4b], c becomes very narrow.

Therefore, when it is going to prepare operating members, such as a switch, in allowances field 4c, extent which the magnitude and number are restrained, for example, arranges the electric power switch and channel shift switch of a television monitor is a limitation.

[0005]

Moreover, when it starts as the display material 4 shows with the chain line, although there are tooth-

space allowances in upper bed side 4a of the display material 4, and it becomes a position, since upper bed side 4a looks up and comes out and is turned to slanting back, if the actuation switch which has the need of operating it frequently in this part is arranged, it will be operated and will become that of ** potatoes. When much actuation switches have furthermore been arranged to this upper bed side 4a, arrangement tooth spaces, such as a liquid crystal panel which it must stop having to contain a big printed circuit board, and the internal structure of the display material 4 crowds in the interior of the upper bed of the display material 4, and constitutes display screen 4b, will receive constraint. Therefore, in the actual condition, it has stopped at forming one piece or two operating buttons 5 which do not have the need of operating it frequently like [for projection / receipt actuation of the display material 4] in the above-mentioned up end-face 4a.

[0006]

It aims at offering the display equipped with the control unit which this design solves the above-mentioned conventional technical problem, and can install it in the sense which display material tends to operate in a projection and the thing which can rotate from a case, and can also make an actuation side large.

[0007]

[Means for Solving the Problem]

In the display with which the display material which can rotate in the direction which changes the sense of the screen in the condition of this design having moved to the method of outside from the interior of a case, and having moved to the method of outside was prepared It is characterized by to prepare the control unit which can be rotated between the position in which it laps with the front face, and the position in which it stands up to a front face in said display material as the 1st means. [0008]

When the outlet of a case is closed as the 2nd means when said display material is contained by the case, and display material projected and rotates to a way outside a case, it is characterized by preparing the rotatable control unit in the standing-up position to the front face of display material.

[0009]

[Function]

With the 1st means of the above, in the condition that display material is contained inside the case, the control unit has put on the front face of display material, and does not need the storage space of a control unit widely within a case. Moreover, when display material projects in a way outside a case, for example, it rotates in a standup or the direction of falling, a control unit serves as a position which stood up to the front face of display material. Since the surface whole region of a control unit can be used, the control unit which used much switches, such as a keyboard, can consist of this standing-up position. Moreover, a control unit serves as sense which is easy to operate it.

[0010]

With the 2nd means, when display material is contained by the case, a control unit demonstrates the function as a lid. For example, by forming an actuation switch etc. in the outside surface of the control unit used as this lid, it can be used as an object for actuation of various equipments. Moreover, since said control unit serves as a standing-up position to the front face of display material, it arranges much switches, such as a keyboard, on the top face of this control unit, and comes to be able to perform actuation of display material etc., when display material projected and rotates to the method of the outside of a case.

[0011]

[Example]

Hereafter, this design is explained with reference to a drawing.

The perspective view showing drawing 1 and drawing 2 according to actuation by the display of the 1st example of this design, the side elevation where drawing 3 - drawing 5 show the display of the 2nd example according to actuation, and drawing 6 are the partial side elevations showing the display of the 3rd example. The 1st example thru/or the 3rd example support the design according to claim 1. the anterior part of the case 1 laid under the console panel of an automobile etc. like the conventional example shown in drawing 12 in the 1st example shown in drawing 1 -- a nose -- the section 2 is

formed. In a case 1, the supporter material 3 is formed free [migration to an A1-A 2-way], a migration bracket (not shown) is further prepared free [migration to an A1-A 2-way] in this supporter material 3, and the base of the display material 11, such as a television monitor, is supported by this migration bracket.

This display material 11 is formed in the location where front 11b which has display screen 11a extended far back a little, and the side ribs 11c and 11c are ahead formed above projection and front 11b for long top rib 11d of a projection dimension at right and left of this front 11b. It has the function which prevents the direct solar radiation to display screen 11a which consists of liquid crystal panels etc. these side ribs 11c and 11c and top rib 11d.

[0012]

As shown in drawing 2 , Crevices 11e and 11e are formed in the lower part of the side ribs 11c and 11c, and the base of these crevices 11e and 11e is the same field as said front 11b.

The support projections 11f and 11f are formed in the lower ends of front 11b of the display material 11, it faces across the base of a control panel 12 in 11f of this support projection, and 11f, and the base of this control panel 12 is supported by said support projections 11f and 11f free [rotation] with the shaft 17.

[0013]

If a control panel 12 is rotated by using the above-mentioned shaft 17 as the supporting point so that it may lap with front 11b of the display material 11 as shown in drawing 1 , a control panel 12 will be settled in crevice 11e, and rear-face 12a of a control panel 12 will become the front face of said side ribs 11c and 11c with the same field mostly. Moreover, a control panel 12 will be in a wrap condition selectively about the lower part of display screen 11a at this time.

Moreover, if the position in which it stands up from front 11b of the display material 11 is made to rotate a control panel 12 as shown in drawing 2 , a control panel 12 will serve as a horizontal position mostly. Moreover, viewing of the whole surface of display screen 11a is attained at this time.

Between the base of a control panel 12, and said support projections 11f and 11f, the stopper device is established so that a control panel 12 may not serve as facing down from a horizontal position. Or when a control panel 12 rotates to the horizontal position shown in drawing 2 , the lock device may be established so that the ** lock of the control panel 12 may be carried out.

[0014]

Various operating members are arranged in the field which serves as facing up in the state of surface 12b of the above-mentioned control panel 12, i.e., drawing 2 . This operating member is many switch buttons 13 and 14 etc. When the display material 11 is used as television which projects ground broadcast, satellite broadcasting service, etc., these switch buttons are used as an electric power switch, a channel shift switch, or a channel selection switch of a large number prepared for every channel.

Moreover, when an indicating equipment 11 is used as various information displays, such as a navigator indicating equipment of an automobile, or a traffic information, or a screen display of facsimile, it is possible to use said switch buttons 13 and 14 etc. as a ten key switch or much keyboard switches.

It is also possible to arrange the submonitor displays 15, such as a small liquid crystal panel and an LED display panel, to surface 12b of a control panel 12 furthermore.

Moreover, one piece or about two operating buttons 16 for receipt / projection actuation of this display material are formed in 11g of upper bed sides of the display material 11.

[0015]

Actuation of the display of the 1st example of the above is explained.

At the non-busy condition, as shown in drawing 1 , control panels 12 are front 11b of the display material 11, and a position to pile up, and are contained in the case 1 in the horizontal position shown with the chain line as it is. this time -- 11g of upper bed sides of the display material 11, and the head of the supporter material 3 -- a nose -- it was located in the same field as the front face of the section 2, and only the operating button 16 for receipt / projection actuation has appeared ahead.

If the above-mentioned operating button 16 is pushed at the time of an activity, 11 projects in the display material of horizontal position 1 direction with the supporter material 3 with the power

formed in the interior of a case 1. The supporter material 3 stops in the location of drawing 1, said migration bracket moves forward further, and the display material 11 moves forward with this. And after only a predetermined dimension projects, the display material 11 starts into the position shown in drawing 1, and is rotated, and display screen 11a is turned to vehicle inboard. This display material 11 starts and rotation is automatically performed by the power of the motor formed in the migration bracket, or the guide device established inside the supporter material 3.

[0016]

After the display material 11 started into the position shown in drawing 1 and has rotated, the lower part of display screen 11a is covered with the control panel 12, but if a control panel 12 is rotated manually and it is made to rotate so that it may be made to stand up to the front as shown in drawing 2, viewing of the whole surface of display screen 11a will be attained. Moreover, surface 12b of a control panel 12 becomes upward, and it appears in the location which the various switch buttons 13 and 14 tend to operate. Predetermined display information can be projected on screen 11a by operating these various switch buttons 13 and 14.

[0017]

When after an activity pushes the operating button 16 in 11g of upper bed sides of an operating member 11, the display material 11 rotates automatically to the horizontal position first shown with the chain line, then, moves to A 2-way, and is contained in a case 1. it is still the standing-up position which a control panel 12 shows to drawing 2 at this time -- a control panel 12 -- a nose -- there is a possibility that it may be damaged in the section 2. What is necessary is to prepare the switch mechanism which detects the position of a control panel 12, and to control to be able to start receipt actuation of the display material 11 by actuation of an operating button 16, only when it is detected that the control panel 12 was certainly rotated to the position manually shown in drawing 1 in order to prevent this.

Moreover, as shown in drawing 1, where a control panel 12 is folded up, a control panel 12 is contained in crevice 11e, and back-of-panel 12a becomes the front face of the side ribs 11c and 11c of the display material 11 with the same field mostly. Therefore, by forming this control panel 12, the width-of-face dimension of the display material 11 of a receipt condition will not increase, and the display material 11 and a control panel 12 will be contained reasonable in a case 1.

[0018]

When the display material 11 projects and rotates the 2nd example shown in drawing 3 thru/or drawing 5, a control panel 12 serves as a standing-up position to the front face of the display material 11 automatically.

In this example, the supporter material 3 drives to an A1-A 2-way in a case 1, and the migration bracket 21 drives the inside of the supporter material 3 to an A1-A 2-way further. And the display material 11 recovers from a horizontal position with the motor power which the base of the display material 11 was supported by the migration bracket 21 free [rotation], and was formed in the migration bracket 21, and rotation actuation is carried out at a position.

[0019]

The base of the same control panel 12 as drawing 1 is supported by the lower part of the display material 11 free [rotation] with the shaft 17. Moreover, a control panel 12 is settled in crevice 11e in the condition of having been folded up to the display material 11, like drawing 1.

However, the guide shaft 22 protrudes on the both-sides end face of a control panel 12. Guide slot 3a prolonged linearly is formed in each supporter material 3 located in the both sides of the display material 11, and said guide shaft 22 is inserted in it free [sliding] at this guide slot 3a.

[0020]

Actuation of the 2nd example is explained.

At the time of un-using it, the display material 11 serves as a horizontal position, and the migration bracket 21 which is supporting this is moved to A 2-way within the supporter material 3. Moreover, the supporter material 3 is also moved to A 2-way within a case 1. namely, the display material 11 -- the condition of drawing 3 -- further -- A 2-way -- moving -- **** -- 11g of upper bed sides of the display material 11 -- the nose of the case 1 front -- it is the same field mostly with the section (not shown).

If the operating button 16 prepared in 11g of upper bed sides of the display material 11 in this condition is pushed, three will drive in the A supporter material 1 direction according to the power device in a case 1, and the supporter material 3 will stop in the location of drawing 3. The migration bracket 21 is further moved in the A1 direction to the supporter material 3 by motor power after that.

[0021]

When the migration bracket 21 moves to near the location shown by drawing 4, the display material 11 starts according to the power device in the migration bracket 21, and it is rotated to a direction. And while the migration bracket 21 moves to the location of drawing 5, the display material 11 starts and serves as a position. While the display material 11 starts and being rotated by the position, the guide shaft 22 prepared in the control panel 12 moves linearly in the inside of guide slot 3a. Therefore, from the event of the display material 11 beginning to rotate, a control panel 12 is relatively rotated to the display material 11 by using a shaft 17 as the supporting point, and out of crevice 11e, it escapes from it gradually and comes out of it. And as shown in drawing 5, when the display material 11 starts, a control panel 12 serves as a standing-up position to the front face of the display material 11 the same with the control panel 12 having been shown in a projection and drawing 2 to the front with the horizontal position.

Although the display material 11 is rotated by the horizontal position from the condition of drawing 5, the migration bracket 21 drives to A 2-way after that and the supporter material 3 drives to A 2-way further in receipt actuation, at this time, a control panel 12 is guided by guide slot 3a, and is piled up into crevice 11e of the display material 11.

[0022]

Next, after the display material 11 projects in a horizontal position from the inside of a case 1, this display material 11 has the rotation supporting point in the upper part, and it is rotated downward, falls, and becomes a position, and it consists of the 3rd example shown in drawing 6 so that display screen 11a may be turned to in the car by this.

And a control panel 12 can be manually rotated now by using as the supporting point the shaft 17 prepared in the lower part of the display material 11. When the display material 11 is contained in a case 1, it is folded up so that a control panel 12 may enter in crevice 11e of the display material 11, and it is manually rotated by the position in which a control panel 12 stands up from the front face of the display material 11 at the time of an activity, and the various switch buttons prepared in surface 12b of a control panel 12 can be operated.

[0023]

The 4th example and the 5th example which are explained below correspond to a design according to claim 2. Drawing 7 is [the side elevation, drawing 10, and drawing 11 according to actuation of the appearance perspective view, drawing 8, and drawing 9 of a display of the 4th example] the side elevation according to actuation of the 5th example.

the 4th example -- a head -- a nose -- it is contained so that the supporter material 3 may drive to an A1-A 2-way in the case 1 which has the section 2, and it is prepared so that the migration bracket 21 may drive to an A1-A 2-way in this supporter material 3. And the base of the display material 11 is supported by the migration bracket 21 free [rotation], and according to the power device carried in the migration bracket 21, the display material 11 recovers from a horizontal position, and is rotated by the position. Or the display material 11 starts according to the guide device prepared in the supporter material 3, and it is rotated by the position.

[0024]

And support projection 3b is prepared at the head of the supporter material 3, and the base of a control panel 31 is supported by this support projection 3b free [rotation] with the shaft 32. A control panel 31 is rotated by the horizontal position shown in the vertical position shown in drawing 8 with hand control, and drawing 9. At the time of the vertical position shown in drawing 8, as shown also in drawing 7, this control panel 31 functions as a lid which plugs up opening of a case 1 and a nose 2. That is, it does not expose but the front of 11g of this upper bed side will be covered with a control panel 31 by 11g of upper bed sides of the display material 11 contained in the case 1 in the horizontal position.

[0025]

As shown in drawing 7, the display material 35, such as the various switch buttons 33 and 34 and a liquid crystal panel, is formed in outside 31a of the control panel 31 of the position which plugs up opening. Since these various switch buttons 33 and 34 are turned outside when the display material 11 is contained in the case 1, they are applicable to actuation unrelated to actuation of the display material 11. For example, it is possible to operate the radio tuner formed in the location different from the radio tuner or case 1 arranged by these switch buttons 33 and 34 at the back side of a case 1. In this case, a screen display of the channel selection information etc. is carried out to the display material 35. Or said switch buttons 33 and 34 can be used as a control switch of CD changer.

[0026]

When using the display material 11, a control panel 31 is rotated to the front with hand control. Since 11g of upper bed sides of the display material 11 of the case 1 interior appears by this, the operating button 16 for receipt / projection actuation prepared in 11g of this upper bed side can be pushed. If this operating button 16 is pushed, like the aforementioned example, further, three will move in theAsupporter material 1 direction, and 21 moves in theAmigration bracket 1 direction, and the display material 11 will start according to the guide device prepared in the power or the supporter material 3 prepared in the migration bracket 21, and it will be rotated by the position.

[0027]

If the display material 11 starts and it rotates into a position as shown in drawing 9, the control panel 31 already manually made into the horizontal position will serve as a standing-up position to the front face of the display material 11. However, outside 31a in which said switch buttons 33 and 34 etc. were formed at this time becomes downward, and inner surface 31b by the side of reverse becomes upward. The switch buttons 13 and 14 and the submonitor display 15 for operating the display material 11 as shown in drawing 2 are established in inner surface 31b which besides becomes the sense, and the display action of the display material 11 can be operated now by these.

Moreover, when three moves in theAsupporter material 1 direction, it can also constitute so that a control panel 31 may rotate automatically to the horizontal position shown in drawing 9 from the vertical position shown in drawing 8. In this case, what is necessary is just to prepare the operating button for projection actuation of the display material 11 with said switch buttons 33 and 34 in outside 31a of a control panel 31. Moreover, what is necessary is just to prepare the operating button for receipt actuation of the display material 11 in inner surface 31b which becomes facing up in the control panel 31 of the horizontal position shown in drawing 9. Or the operating button for receipt actuation may be prepared in 11g of upper bed sides of the display material 11, as the sign 16 showed.

[0028]

In the 5th example shown in drawing 10 and drawing 11, the control panel 41 is supported free [rotation] with the shaft 42 established ahead [of the display material 11 / upper bed]. The position put on 11g of upper bed sides of the display material 11 as the chain line shows in drawing 11, and the position in which it stands up ahead of the front face of the display material 11 as a continuous line shows can be made to rotate this control panel 41 manually. the control panel 41 put on 11g of upper bed sides of the display material 11 as shown in drawing 10 when the display material 11 was contained in the case 1 -- a case 1 and a nose -- it functions as a lid which plugs up opening of the section 2. As shown in drawing 7, the operating button for projection actuation of the display material 11 etc. is arranged at outside 41a of the control panel 41 when functioning as a lid, as shown in drawing 10 with the various switch buttons 33 and 34 for tuner control or CD changer control.

[0029]

Moreover, if the position in which it stands up to the front is made to rotate a control panel 41 as shown in drawing 11, since inner surface 41b of a control panel 41 will become facing up, the switch buttons 13 and 14 for operating the display material 11 as shown in this inner surface 41b at drawing 2 can be arranged. In this case, when preparing the switch button of the shape of a sheet which does not have a projection in inner surface 41b and it puts on 11g of upper bed sides of the display material 11 as a control panel 41 shows with a broken line in drawing 11, the switch formed in inner surface 41b does

not hit 11g of upper bed sides. Moreover, the switch button which projects in inner surface 41b may be prepared, and the crevice which escapes this switch button may be formed in 11g of upper bed sides of the display material 11.

[0030]

Moreover, if the position which shows a control panel 41 as a continuous line in drawing 11 is made to stand up even if it is the case where a switch button is not prepared in the above-mentioned inner surface 41b, it can function as a sun visor which prevents that a direct solar radiation shines upon a display screen. In this case, the switches which operate the display material 11 may be formed only in the field shown by 11h of the lower part of the front face of the display material 11.

In addition, although considered as the television monitor which used the liquid crystal panel etc. as display material in the above-mentioned example, LED and other display panels may be used.

Moreover, it is not necessary to start with projection of a display material 1 direction of 11 or, power does not necessarily need to perform rotation to the direction of falling, and it may be made to operate with hand control.

[0031]

[Effect of the Device]

In a design according to claim 1, since a control unit puts on the front face of display material and is contained in a case, it is not necessary to prepare the storage space of a control unit widely in a case.

Moreover, when display material projects in a way outside a case, for example, it rotates in a standup or the direction of falling, a control unit serves as a position which stood up to the front face of display material. With this standing-up position, since it becomes the sense which a control unit tends to use and the surface whole region of a control unit can be used, much switches, such as a keyboard, can be arranged.

[0032]

In a design according to claim 2, when display material is contained by the case, a control unit demonstrates the function as a lid. For example, by forming an actuation switch etc. in the outside surface of the control unit used as this lid, it can be used as an object for actuation of various equipments. Moreover, since said control unit serves as a standing-up position to the front face of display material, it arranges much switches, such as a keyboard, on the top face of this control unit, and comes to be able to perform actuation of display material etc., when display material projected and rotates to the method of the outside of a case.

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TECHNICAL FIELD

[Industrial Application]

This design is related with the display with which the control unit which starts the display which display material, such as a television monitor, moves and starts to a way outside a case, or rotates into a falling position etc., especially is easy to operate it from the screen front of display material was prepared.
[0002]

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PRIOR ART

[Description of the Prior Art]

Drawing 12 is the perspective view showing the display for the conventional mount.

a case 1 lays this display underground in the console panel of an automobile -- having -- a nose -- the apical surface of the section 2 is installed in the condition of appearing in a console panel side.

In the case 1, the supporter material 3 which moves to an A1-A 2-way is formed, and the display material 4, such as a television monitor, is supported by the migration bracket further prepared in the interior of this supporter material 3.

[0003]

at the time of un-using it, the display material 4 contains in a case 1 in a horizontal position -- having -- the head of upper bed side 4a of the display material 4, and the supporter material 3 -- a nose -- it is located in the same field as the front face of the section 2. A push on the operating button 5 prepared in upper bed side 4a projects four in the display material of horizontal position 1 direction with the supporter material 3 with the power formed in the interior of a case 1. The supporter material 3 stops in the location of drawing 12, said migration bracket moves forward further, and the display material 4 moves forward with this. And after only a predetermined dimension projects, the display material 4 starts into the position shown with the chain line in drawing 12, and is rotated, and the display screen 4b is turned to vehicle inboard.

When after an activity pushes said operating button 5, the display material 4 rotates to the horizontal position first shown as a continuous line, then, moves to A 2-way, and is contained in a case 1.

[0004]

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EFFECT OF THE INVENTION

[Effect of the Device]

In a design according to claim 1, since a control unit puts on the front face of display material and is contained in a case, it is not necessary to prepare the storage space of a control unit widely in a case. Moreover, when display material projects in a way outside a case, for example, it rotates in a standup or the direction of falling, a control unit serves as a position which stood up to the front face of display material. With this standing-up position, since it becomes the sense which a control unit tends to use and the surface whole region of a control unit can be used, much switches, such as a keyboard, can be arranged.

[0032]

In a design according to claim 2, when display material is contained by the case, a control unit demonstrates the function as a lid. For example, by forming an actuation switch etc. in the outside surface of the control unit used as this lid, it can be used as an object for actuation of various equipments. Moreover, since said control unit serves as a standing-up position to the front face of display material, it arranges much switches, such as a keyboard, on the top face of this control unit, and comes to be able to perform actuation of display material etc., when display material projected and rotates to the method of the outside of a case.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]

In the display for the above-mentioned mount, since an installation tooth space in the car had constraint, the dimension of a case 1 could seldom be enlarged, but the magnitude of the display material 4 therefore contained in a case 1 was also restricted. And since display screen 4b of the display material 4 must secure somewhat widely, the area of allowances field 4c of fields other than display screen 4b, for example, down [of display screen 4b], c becomes very narrow.

Therefore, when it is going to prepare operating members, such as a switch, in allowances field 4c, extent which the magnitude and number are restrained, for example, arranges the electric power switch and channel shift switch of a television monitor is a limitation.

[0005]

Moreover, when it starts as the display material 4 shows with the chain line, although there are tooth-space allowances in upper bed side 4a of the display material 4, and it becomes a position, since upper bed side 4a looks up and comes out and is turned to slanting back, if the actuation switch which has the need of operating it frequently in this part is arranged, it will be operated and will become that of ** potatoes. When much actuation switches have furthermore been arranged to this upper bed side 4a, arrangement tooth spaces, such as a liquid crystal panel which it must stop having to contain a big printed circuit board, and the internal structure of the display material 4 crowds in the interior of the upper bed of the display material 4, and constitutes display screen 4b, will receive constraint.

Therefore, in the actual condition, it has stopped at forming one piece or two operating buttons 5 which do not have the need of operating it frequently like [for projection / receipt actuation of the display material 4] in the above-mentioned up end-face 4a.

[0006]

It aims at offering the display equipped with the control unit which this design solves the above-mentioned conventional technical problem, and can install it in the sense which display material tends to operate in a projection and the thing which can rotate from a case, and can also make an actuation side large.

[0007]

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MEANS

[Means for Solving the Problem]

In the display with which the display material which can rotate in the direction which changes the sense of the screen in the condition of this design having moved to the method of outside from the interior of a case, and having moved to the method of outside was prepared It is characterized by preparing the control unit which can be rotated between the position in which it laps with the front face, and the position in which it stands up to a front face in said display material as the 1st means. [0008]

When the outlet of a case is closed as the 2nd means when said display material is contained by the case, and display material projected and rotates to a way outside a case, it is characterized by preparing the rotatable control unit in the standing-up position to the front face of display material.

[0009]

[Translation done.]

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OPERATION

[Function]

With the 1st means of the above, in the condition that display material is contained inside the case, the control unit has put on the front face of display material, and does not need the storage space of a control unit widely within a case. Moreover, when display material projects in a way outside a case, for example, it rotates in a standup or the direction of falling, a control unit serves as a position which stood up to the front face of display material. Since the surface whole region of a control unit can be used, the control unit which used much switches, such as a keyboard, can consist of this standing-up position. Moreover, a control unit serves as sense which is easy to operate it.

[0010]

With the 2nd means, when display material is contained by the case, a control unit demonstrates the function as a lid. For example, by forming an actuation switch etc. in the outside surface of the control unit used as this lid, it can be used as an object for actuation of various equipments. Moreover, since said control unit serves as a standing-up position to the front face of display material, it arranges much switches, such as a keyboard, on the top face of this control unit, and comes to be able to perform actuation of display material etc., when display material projected and rotates to the method of the outside of a case.

[0011]

[Translation done.]

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EXAMPLE

[Example]

Hereafter, this design is explained with reference to a drawing.

The perspective view showing drawing 1 and drawing 2 according to actuation by the display of the 1st example of this design, the side elevation where drawing 3 - drawing 5 show the display of the 2nd example according to actuation, and drawing 6 are the partial side elevations showing the display of the 3rd example. The 1st example thru/or the 3rd example support the design according to claim 1. the anterior part of the case 1 laid under the console panel of an automobile etc. like the conventional example shown in drawing 12 in the 1st example shown in drawing 1 -- a nose -- the section 2 is formed. In a case 1, the supporter material 3 is formed free [migration to an A1-A 2-way], a migration bracket (not shown) is further prepared free [migration to an A1-A 2-way] in this supporter material 3, and the base of the display material 11, such as a television monitor, is supported by this migration bracket.

This display material 11 is formed in the location where front 11b which has display screen 11a extended far back a little, and the side ribs 11c and 11c are ahead formed above projection and front 11b for long top rib 11d of a projection dimension at right and left of this front 11b. It has the function which prevents the direct solar radiation to display screen 11a which consists of liquid crystal panels etc. these side ribs 11c and 11c and top rib 11d.

[0012]

As shown in drawing 2 , Crevices 11e and 11e are formed in the lower part of the side ribs 11c and 11c, and the base of these crevices 11e and 11e is the same field as said front 11b.

The support projections 11f and 11f are formed in the lower ends of front 11b of the display material 11, it faces across the base of a control panel 12 in 11f of this support projection, and 11f, and the base of this control panel 12 is supported by said support projections 11f and 11f free [rotation] with the shaft 17.

[0013]

If a control panel 12 is rotated by using the above-mentioned shaft 17 as the supporting point so that it may lap with front 11b of the display material 11 as shown in drawing 1 , a control panel 12 will be settled in crevice 11e, and rear-face 12a of a control panel 12 will become the front face of said side ribs 11c and 11c with the same field mostly. Moreover, a control panel 12 will be in a wrap condition selectively about the lower part of display screen 11a at this time.

Moreover, if the position in which it stands up from front 11b of the display material 11 is made to rotate a control panel 12 as shown in drawing 2 , a control panel 12 will serve as a horizontal position mostly. Moreover, viewing of the whole surface of display screen 11a is attained at this time.

Between the base of a control panel 12, and said support projections 11f and 11f, the stopper device is established so that a control panel 12 may not serve as facing down from a horizontal position. Or when a control panel 12 rotates to the horizontal position shown in drawing 2 , the lock device may be established so that the ** lock of the control panel 12 may be carried out.

[0014]

Various operating members are arranged in the field which serves as facing up in the state of surface 12b of the above-mentioned control panel 12, i.e., drawing 2 . This operating member is many switch buttons 13 and 14 etc. When the display material 11 is used as television which projects ground broadcast, satellite broadcasting service, etc., these switch buttons are used as an electric power switch, a channel shift switch, or a channel selection switch of a large number prepared for every channel. Moreover, when an indicating equipment 11 is used as various information displays, such as a navigator indicating equipment of an automobile, or a traffic information, or a screen display of facsimile, it is possible to use said switch buttons 13 and 14 etc. as a ten key switch or much keyboard switches. It is also possible to arrange the submonitor displays 15, such as a small liquid crystal panel and an LED display panel, to surface 12b of a control panel 12 furthermore.

Moreover, one piece or about two operating buttons 16 for receipt / projection actuation of this display material are formed in 11g of upper bed sides of the display material 11.

[0015]

Actuation of the display of the 1st example of the above is explained.

At the non-busy condition, as shown in drawing 1 , control panels 12 are front 11b of the display material 11, and a position to pile up, and are contained in the case 1 in the horizontal position shown with the chain line as it is. this time -- 11g of upper bed sides of the display material 11, and the head of the supporter material 3 -- a nose -- it was located in the same field as the front face of the section 2, and only the operating button 16 for receipt / projection actuation has appeared ahead.

If the above-mentioned operating button 16 is pushed at the time of an activity, 11 projects in the A display material of horizontal position 1 direction with the supporter material 3 with the power formed in the interior of a case 1. The supporter material 3 stops in the location of drawing 1 , said migration bracket moves forward further, and the display material 11 moves forward with this. And after only a predetermined dimension projects, the display material 11 starts into the position shown in drawing 1 , and is rotated, and display screen 11a is turned to vehicle inboard. This display material 11 starts and rotation is automatically performed by the power of the motor formed in the migration bracket, or the guide device established inside the supporter material 3.

[0016]

After the display material 11 started into the position shown in drawing 1 and has rotated, the lower part of display screen 11a is covered with the control panel 12, but if a control panel 12 is rotated manually and it is made to rotate so that it may be made to stand up to the front as shown in drawing 2 , viewing of the whole surface of display screen 11a will be attained. Moreover, surface 12b of a control panel 12 becomes upward, and it appears in the location which the various switch buttons 13 and 14 tend to operate. Predetermined display information can be projected on screen 11a by operating these various switch buttons 13 and 14.

[0017]

When after an activity pushes the operating button 16 in 11g of upper bed sides of an operating member 11, the display material 11 rotates automatically to the horizontal position first shown with the chain line, then, moves to A 2-way, and is contained in a case 1. it is still the standing-up position which a control panel 12 shows to drawing 2 at this time -- a control panel 12 -- a nose -- there is a possibility that it may be damaged in the section 2. What is necessary is to prepare the switch mechanism which detects the position of a control panel 12, and to control to be able to start receipt actuation of the display material 11 by actuation of an operating button 16, only when it is detected that the control panel 12 was certainly rotated to the position manually shown in drawing 1 in order to prevent this. Moreover, as shown in drawing 1 , where a control panel 12 is folded up, a control panel 12 is contained in crevice 11e, and back-of-panel 12a becomes the front face of the side ribs 11c and 11c of the display material 11 with the same field mostly. Therefore, by forming this control panel 12, the width-of-face dimension of the display material 11 of a receipt condition will not increase, and the display material 11 and a control panel 12 will be contained reasonable in a case 1.

[0018]

When the display material 11 projects and rotates the 2nd example shown in drawing 3 thru/or drawing

5 , a control panel 12 serves as a standing-up position to the front face of the display material 11 automatically.

In this example, the supporter material 3 drives to an A1-A 2-way in a case 1, and the migration bracket 21 drives the inside of the supporter material 3 to an A1-A 2-way further. And the display material 11 recovers from a horizontal position with the motor power which the base of the display material 11 was supported by the migration bracket 21 free [rotation], and was formed in the migration bracket 21, and rotation actuation is carried out at a position.

[0019]

The base of the same control panel 12 as drawing 1 is supported by the lower part of the display material 11 free [rotation] with the shaft 17. Moreover, a control panel 12 is settled in crevice 11e in the condition of having been folded up to the display material 11, like drawing 1 .

However, the guide shaft 22 protrudes on the both-sides end face of a control panel 12. Guide slot 3a prolonged linearly is formed in each supporter material 3 located in the both sides of the display material 11, and said guide shaft 22 is inserted in it free [sliding] at this guide slot 3a.

[0020]

Actuation of the 2nd example is explained.

At the time of un-using it, the display material 11 serves as a horizontal position, and the migration bracket 21 which is supporting this is moved to A 2-way within the supporter material 3. Moreover, the supporter material 3 is also moved to A 2-way within a case 1. namely, the display material 11 -- the condition of drawing 3 -- further -- A 2-way -- moving -- **** -- 11g of upper bed sides of the display material 11 -- the nose of the case 1 front -- it is the same field mostly with the section (not shown).

If the operating button 16 prepared in 11g of upper bed sides of the display material 11 in this condition is pushed, three will drive in theAsupporter material 1 direction according to the power device in a case 1, and the supporter material 3 will stop in the location of drawing 3 . The migration bracket 21 is further moved in the A1 direction to the supporter material 3 by motor power after that.

[0021]

When the migration bracket 21 moves to near the location shown by drawing 4 , the display material 11 starts according to the power device in the migration bracket 21, and it is rotated to a direction. And while the migration bracket 21 moves to the location of drawing 5 , the display material 11 starts and serves as a position. While the display material 11 starts and being rotated by the position, the guide shaft 22 prepared in the control panel 12 moves linearly in the inside of guide slot 3a. Therefore, from the event of the display material 11 beginning to rotate, a control panel 12 is relatively rotated to the display material 11 by using a shaft 17 as the supporting point, and out of crevice 11e, it escapes from it gradually and comes out of it. And as shown in drawing 5 , when the display material 11 starts, a control panel 12 serves as a standing-up position to the front face of the display material 11 the same with the control panel 12 having been shown in a projection and drawing 2 to the front with the horizontal position.

Although the display material 11 is rotated by the horizontal position from the condition of drawing 5 , the migration bracket 21 drives to A 2-way after that and the supporter material 3 drives to A 2-way further in receipt actuation, at this time, a control panel 12 is guided by guide slot 3a, and is piled up into crevice 11e of the display material 11.

[0022]

Next, after the display material 11 projects in a horizontal position from the inside of a case 1, this display material 11 has the rotation supporting point in the upper part, and it is rotated downward, falls, and becomes a position, and it consists of the 3rd example shown in drawing 6 so that display screen 11a may be turned to in the car by this.

And a control panel 12 can be manually rotated now by using as the supporting point the shaft 17 prepared in the lower part of the display material 11. When the display material 11 is contained in a case 1, it is folded up so that a control panel 12 may enter in crevice 11e of the display material 11, and it is manually rotated by the position in which a control panel 12 stands up from the front face of the display material 11 at the time of an activity, and the various switch buttons prepared in surface 12b of a control

panel 12 can be operated.

[0023]

The 4th example and the 5th example which are explained below correspond to a design according to claim 2. Drawing 7 is [the side elevation, drawing 10 , and drawing 11 according to actuation of the appearance perspective view, drawing 8 , and drawing 9 of a display of the 4th example] the side elevation according to actuation of the 5th example.

the 4th example -- a head -- a nose -- it is contained so that the supporter material 3 may drive to an A1-A 2-way in the case 1 which has the section 2, and it is prepared so that the migration bracket 21 may drive to an A1-A 2-way in this supporter material 3. And the base of the display material 11 is supported by the migration bracket 21 free [rotation], and according to the power device carried in the migration bracket 21, the display material 11 recovers from a horizontal position, and is rotated by the position. Or the display material 11 starts according to the guide device prepared in the supporter material 3, and it is rotated by the position.

[0024]

And support projection 3b is prepared at the head of the supporter material 3, and the base of a control panel 31 is supported by this support projection 3b free [rotation] with the shaft 32. A control panel 31 is rotated by the horizontal position shown in the vertical position shown in drawing 8 with hand control, and drawing 9 . At the time of the vertical position shown in drawing 8 , as shown also in drawing 7 , this control panel 31 functions as a lid which plugs up opening of a case 1 and a nose 2. That is, it does not expose but the front of 11g of this upper bed side will be covered with a control panel 31 by 11g of upper bed sides of the display material 11 contained in the case 1 in the horizontal position.

[0025]

As shown in drawing 7 , the display material 35, such as the various switch buttons 33 and 34 and a liquid crystal panel, is formed in outside 31a of the control panel 31 of the position which plugs up opening. Since these various switch buttons 33 and 34 are turned outside when the display material 11 is contained in the case 1, they are applicable to actuation unrelated to actuation of the display material 11. For example, it is possible to operate the radio tuner formed in the location different from the radio tuner or case 1 arranged by these switch buttons 33 and 34 at the back side of a case 1. In this case, a screen display of the channel selection information etc. is carried out to the display material 35. Or said switch buttons 33 and 34 can be used as a control switch of CD changer.

[0026]

When using the display material 11, a control panel 31 is rotated to the front with hand control. Since 11g of upper bed sides of the display material 11 of the case 1 interior appears by this, the operating button 16 for receipt / projection actuation prepared in 11g of this upper bed side can be pushed. If this operating button 16 is pushed, like the aforementioned example, further, three will move in theAsupporter material 1 direction, and 21 moves in theAmigration bracket 1 direction, and the display material 11 will start according to the guide device prepared in the power or the supporter material 3 prepared in the migration bracket 21, and it will be rotated by the position.

[0027]

If the display material 11 starts and it rotates into a position as shown in drawing 9 , the control panel 31 already manually made into the horizontal position will serve as a standing-up position to the front face of the display material 11. However, outside 31a in which said switch buttons 33 and 34 etc. were formed at this time becomes downward, and inner surface 31b by the side of reverse becomes upward. The switch buttons 13 and 14 and the submonitor display 15 for operating the display material 11 as shown in drawing 2 are established in inner surface 31b which besides becomes the sense, and the display action of the display material 11 can be operated now by these.

Moreover, when three moves in theAsupporter material 1 direction, it can also constitute so that a control panel 31 may rotate automatically to the horizontal position shown in drawing 9 from the vertical position shown in drawing 8 . In this case, what is necessary is just to prepare the operating button for projection actuation of the display material 11 with said switch buttons 33 and 34 in outside 31a of a control panel 31. Moreover, what is necessary is just to prepare the operating button for receipt

actuation of the display material 11 in inner surface 31b which becomes facing up in the control panel 31 of the horizontal position shown in drawing 9 . Or the operating button for receipt actuation may be prepared in 11g of upper bed sides of the display material 11, as the sign 16 showed.

[0028]

In the 5th example shown in drawing 10 and drawing 11 , the control panel 41 is supported free [rotation] with the shaft 42 established ahead [of the display material 11 / upper bed]. The position put on 11g of upper bed sides of the display material 11 as the chain line shows in drawing 11 , and the position in which it stands up ahead of the front face of the display material 11 as a continuous line shows can be made to rotate this control panel 41 manually. the control panel 41 put on 11g of upper bed sides of the display material 11 as shown in drawing 10 when the display material 11 was contained in the case 1 -- a case 1 and a nose -- it functions as a lid which plugs up opening of the section 2.

As shown in drawing 7 , the operating button for projection actuation of the display material 11 etc. is arranged at outside 41a of the control panel 41 when functioning as a lid, as shown in drawing 10 with the various switch buttons 33 and 34 for tuner control or CD changer control.

[0029]

Moreover, if the position in which it stands up to the front is made to rotate a control panel 41 as shown in drawing 11 , since inner surface 41b of a control panel 41 will become facing up, the switch buttons 13 and 14 for operating the display material 11 as shown in this inner surface 41b at drawing 2 can be arranged. In this case, when preparing the switch button of the shape of a sheet which does not have a projection in inner surface 41b and it puts on 11g of upper bed sides of the display material 11 as a control panel 41 shows with a broken line in drawing 11 , the switch formed in inner surface 41b does not hit 11g of upper bed sides. Moreover, the switch button which projects in inner surface 41b may be prepared, and the crevice which escapes this switch button may be formed in 11g of upper bed sides of the display material 11.

[0030]

Moreover, if the position which shows a control panel 41 as a continuous line in drawing 11 is made to stand up even if it is the case where a switch button is not prepared in the above-mentioned inner surface 41b, it can function as a sun visor which prevents that a direct solar radiation shines upon a display screen. In this case, the switches which operate the display material 11 may be formed only in the field shown by 11h of the lower part of the front face of the display material 11.

In addition, although considered as the television monitor which used the liquid crystal panel etc. as display material in the above-mentioned example, LED and other display panels may be used.

Moreover, it is not necessary to start with projection of a display material 1 direction of 11 or, power does not necessarily need to perform rotation to the direction of falling, and it may be made to operate with hand control.

[0031]

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view showing the condition that the control panel of the display for mount of the 1st example was folded up,

[Drawing 2] The perspective view showing the condition that the control panel stood up from display material in the 1st example,

[Drawing 3] The side elevation showing the condition that the display material of the display for mount of the 2nd example begins to project,

[Drawing 4] The side elevation showing the condition that display material began to start and rotate in the 2nd example,

[Drawing 5] The side elevation showing the condition that stand going up of display material was completed in the 2nd example,

[Drawing 6] The side elevation showing the condition that the display material of the display for mount of the 3rd example fell,

[Drawing 7] The perspective view showing the condition that the control panel of the display for mount of the 4th example is functioning as a lid,

[Drawing 8] The partial side elevation showing the condition of drawing 7,

[Drawing 9] The partial side elevation showing the condition that display material started in the 4th example,

[Drawing 10] The side elevation showing the condition that the control panel is functioning as a lid with the display for mount of the 5th example,

[Drawing 11] The side elevation showing the condition that display material started in the 5th example,

[Drawing 12] The perspective view showing the conventional display for mount,

[Description of Notations]

1 Case

2 Nose -- Section

3 Supporter Material

11 Display Material

11a Display screen

11b The front face of display material

11c Side rib

11d Top rib

11e Crevice

11g Up end face

12 Control Panel

13 14 Switch button

16 Operating Button

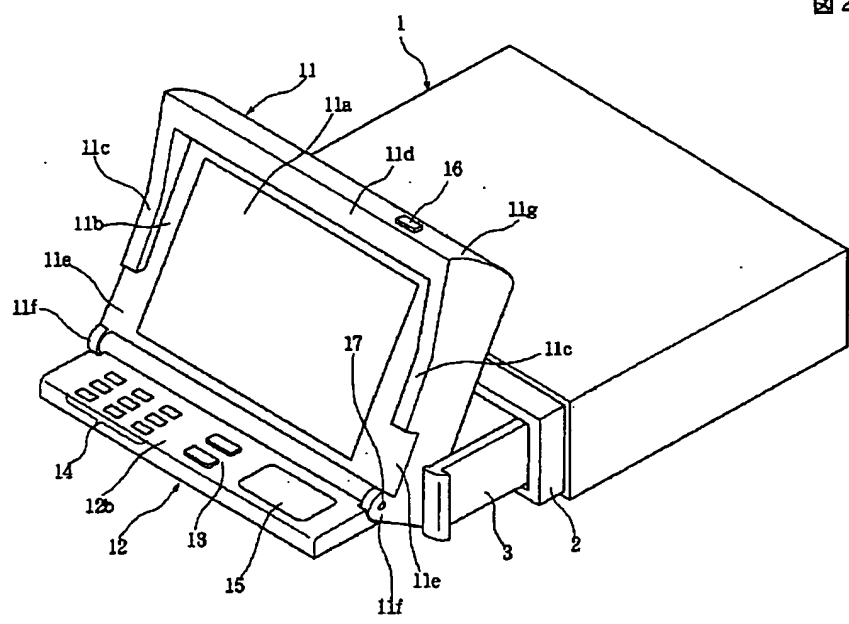
21 Migration Bracket

31 41 Control panel

33 34 Switch button

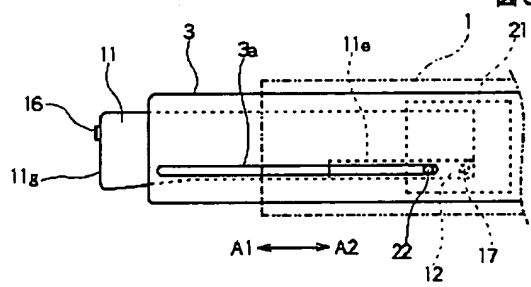
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図 2



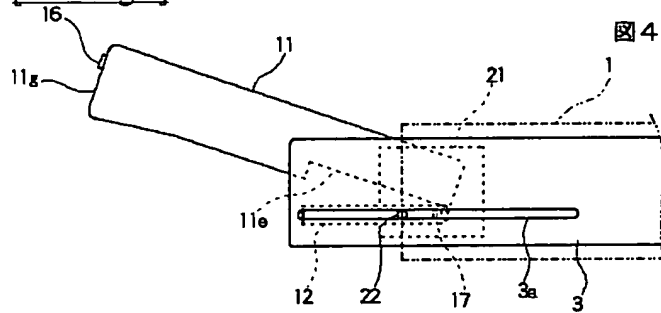
[Drawing 3]

図 3



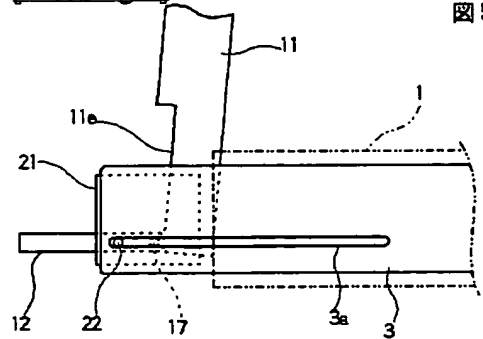
[Drawing 4]

図 4

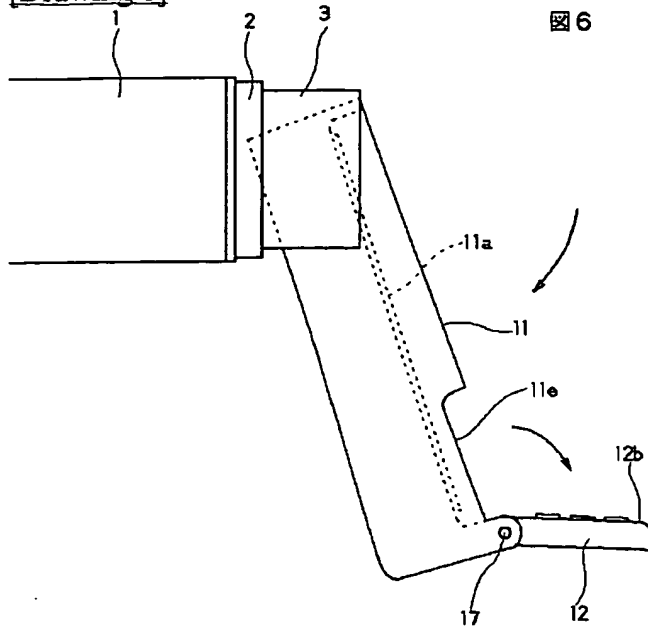


[Drawing 5]

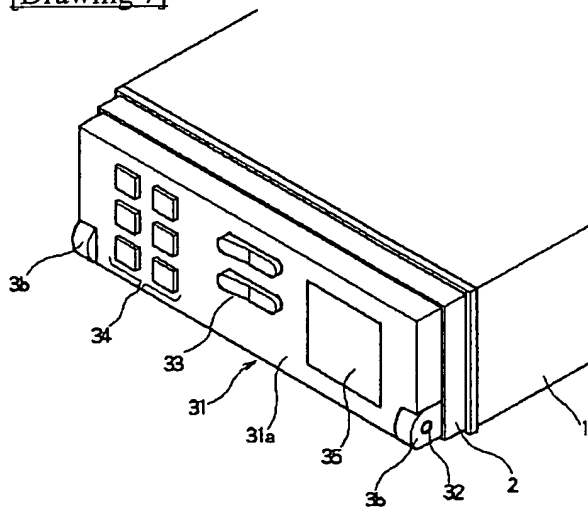
図 5



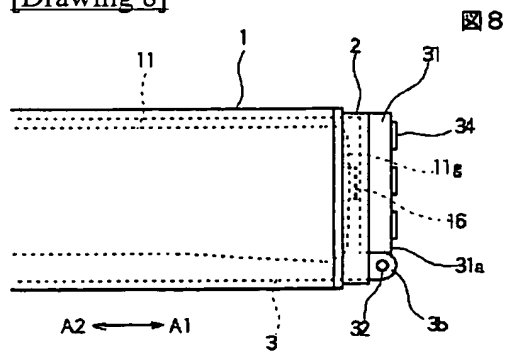
[Drawing 6]



[Drawing 7]

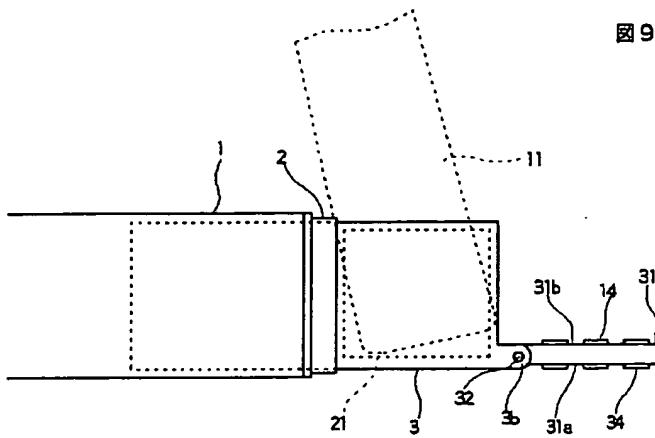


[Drawing 8]



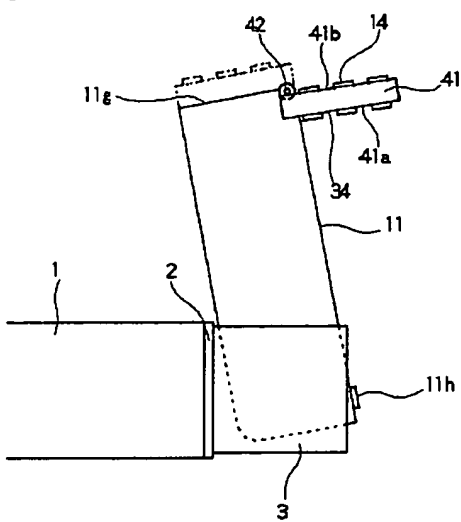
[Drawing 9]

図 9



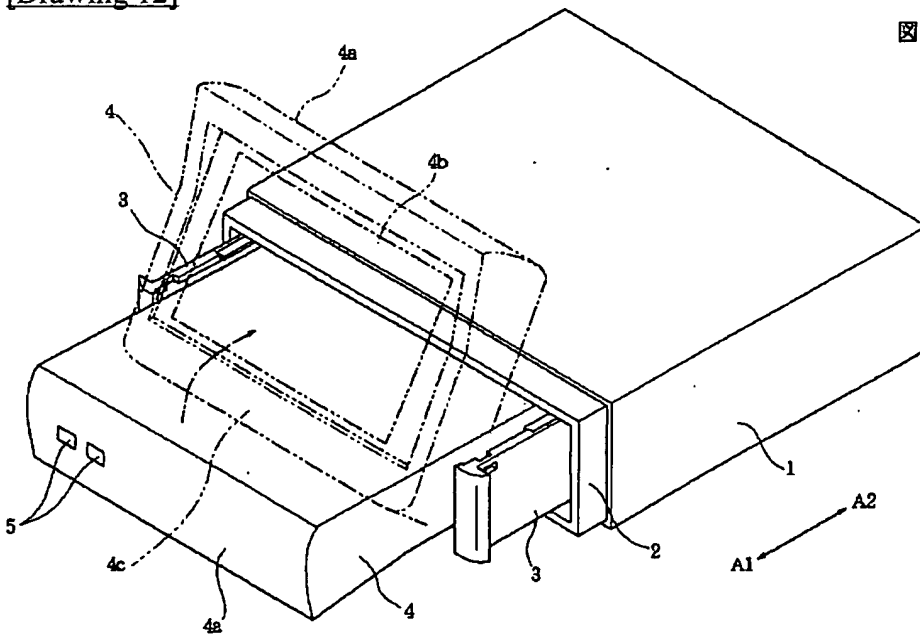
[Drawing 11]

図 11



[Drawing 12]

図 12



[Translation done.]